

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the Application:

Listing of the Claims

5 Pending Claims

1. (canceled)

21. (new): A process for the production of refinery transportation fuel or blending components for refinery transportation fuel, which process comprises:

10 providing an organic feedstock consisting essentially of material boiling between about 75° C. and about 425° C. comprising a mixture of sulfur-containing, nitrogen-containing and other organic compounds derived from natural petroleum by processes that include reacting a petroleum distillate consisting essentially of material boiling between about 50° C. and about 425° C. with a source of hydrogen at hydrogenation conditions in the presence of a 15 hydrogenation catalyst to assist by hydrogenation removal of sulfur and/or nitrogen from the petroleum distillate;

20 partitioning by distillation the organic feedstock to provide at least one low-boiling organic part consisting of a sulfur-lean, mono-aromatic-rich fraction, and a high-boiling organic part consisting of a sulfur-rich, mono-aromatic-lean fraction;

25 contacting a gaseous source of dioxygen with at least a portion of the low-boiling organic part in a liquid reaction medium containing a heterogeneous oxygenation catalyst system which exhibits a capability to enhance the incorporation of oxygen into a mixture of liquid organic compounds and comprises one or more catalyst metal selected from the group consisting of vanadium, chromium, molybdenum, tungsten, bismuth manganese, iron, cobalt, nickel, palladium, platinum, copper and silver, while maintaining the reaction medium substantially free of halogen and/or halogen-containing compounds, to

form a liquid mixture comprising hydrocarbons, oxygenated organic compounds, water of reaction, and acidic co-products;

separating from the mixture at least a first organic liquid of low density comprising hydrocarbons, oxygenated sulfur-containing, oxygenated nitrogen-

5 containing and other oxygenated organic compounds and acidic co-products and at least portions of the catalyst metal, water of reaction and acidic co-products, and a second separated liquid which is an aqueous solution containing at least a portion of the oxidized sulfur-containing and/or nitrogen-containing organic compounds; and

10 contacting all or a portion of the separated organic liquid with a neutralizing agent thereby recovering a low-boiling oxygenated product having a low content of acidic co-products.

22. (new): The process according to claim 21 wherein the hydrogenation catalyst comprises at least one active metal, selected from the 15 group consisting of the *d*-transition elements in the Periodic Table, each incorporated onto an inert support in an amount of from about 0.1 percent to about 20 percent by weight of the total catalyst.

23. (new): The process according to claim 21 which further comprises recovering at least a portion of the heterogeneous oxygenation catalyst system 20 and injecting all or a portion of the recovered catalyst system into the liquid reaction medium.

24. (new): The process according to claim 21 wherein the oxidizing agent comprises a gaseous source of dioxygen, the active catalyst metal of the oxygenation catalyst system is employed as metal oxide, mixed metal oxide, 25 and/or basic salts of the metal or mixed metal oxide.

25 (new): The process according to claim 21 wherein the heterogeneous oxygenation catalyst system comprises an oxygenation catalyst containing from about 1 percent to about 30 percent chromium as oxide and

from about 0.1 percent to about 5 percent platinum on a support comprising gamma alumina.

26. (new): The process according to claim 21 wherein the heterogeneous oxygenation catalyst system comprises chromium molybdate or
5 bismuth molybdate and optionally magnesium.

27. (new): The process according to claim 21 wherein the heterogeneous oxygenation catalyst system comprises gamma alumina and a catalyst represented by the formula $Na_2Cr_2O_7$ in an amount of from about 0.1 percent to about 1.5 percent of the total catalyst system.

10 28. (new): The process according to claim 21 further comprising blending at least a portion of the low-boiling oxygenated product with at least a portion of the high-boiling product to obtain components for refinery blending of transportation fuel.

15 29. (new): The process according to claim 28 wherein the neutralizing agent is an aqueous solution of a chemical base in the form of carbonate or bicarbonate, and the recovered oxygenated product exhibits a total acid number of less than about 20 mg KOH/g.

20 30. (new): The process according to claim 28 wherein the neutralizing agent is an aqueous solution of a compound selected from the group consisting of sodium, potassium, barium, calcium and magnesium in the form of carbonate or bicarbonate, and the recovered oxygenated product exhibits a total acid number of less than about 20 mg KOH/g .

REMARKS

25 This Amendment is respectfully submitted to place subject divisional Application in condition for allowance. In particular, Claim 1 from Serial No.